

Title (en)
Internal combustion engine

Title (de)
Brennkraftmaschine

Title (fr)
Moteur à combustion interne

Publication
EP 1236874 A3 20030521 (EN)

Application
EP 02002390 A 20020131

Priority
• JP 2001055135 A 20010228
• JP 2001162436 A 20010530

Abstract (en)
[origin: EP1236874A2] The invention increases a thermal efficiency by increasing the degree of constant volume of a fuel-air mixture at the time of combustion in an internal combustion engine. To achieve this, in an internal combustion engine in which a piston 16 slidably fitted in a cylinder 15 is connected to a crankshaft 19 via a connecting rod 21, a cylinder head 12 in which a combustion chamber 22 is defined is disposed between the piston 16 and the crankshaft 19. As compared with a prior art internal combustion engine in which a combustion chamber is disposed opposite to a crankshaft with a piston put therebetween, a ratio of an increased amount of the volume of the combustion chamber 22 to an increased amount of a crank angle of the piston 16 from the top dead center can be suppressed at a small value. As a result, it is possible to increase the degree of constant volume of a fuel-air mixture at the time of combustion and hence to increase a thermal efficiency of the internal combustion engine. Also, since a tensile load is applied to a connecting rod 21 in an expansion stroke, it is possible to lower a strength of the connecting rod 21 and hence to reduce the weight thereof as compared with the prior art internal combustion engine in which a compressive load is applied to a connecting rod.
<IMAGE>

IPC 1-7
F02B 41/00; **F02B 75/32**

IPC 8 full level
F02B 75/32 (2006.01); **F02B 41/00** (2006.01); **F02B 43/00** (2006.01); **F02B 61/02** (2006.01); **F02B 75/16** (2006.01)

CPC (source: EP US)
F02B 41/00 (2013.01 - EP US); **F02B 43/00** (2013.01 - EP US); **F02B 61/02** (2013.01 - EP US); **F02B 75/16** (2013.01 - EP US);
Y02T 10/12 (2013.01 - EP US); **Y02T 10/30** (2013.01 - EP US)

Citation (search report)
• [X] US 6062187 A 20000516 - PATTAKOS MANOUSOS [GR], et al
• [X] US 5167208 A 19921201 - RASIAH RANDOLPH R [US]
• [A] DE 634293 C 19360824 - THOS W WARD LTD, et al
• [A] GB 214613 A 19250108 - ANTON GAZDA
• [A] US 3633429 A 19720111 - OLSON THORVALD N

Cited by
WO2004090300A3

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)
EP 1236874 A2 20020904; **EP 1236874 A3 20030521**; **EP 1236874 B1 20070606**; CN 1184412 C 20050112; CN 1373289 A 20021009;
DE 60220461 D1 20070719; DE 60220461 T2 20070920; JP 2002327624 A 20021115; US 2002117144 A1 20020829; US 6763796 B2 20040720

DOCDB simple family (application)
EP 02002390 A 20020131; CN 02106406 A 20020227; DE 60220461 T 20020131; JP 2001162436 A 20010530; US 8417802 A 20020228